

ON THE FISHES OF THE MANCHAR LAKE (SIND).

BY

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Mr. Salim A. Ali<sup>1</sup> recently published a fairly detailed account of the topography, etc., of the Manchar Lake in Sind, and in his account included short notes on the peculiar methods of fishing and fowling as practised in the lake; he also published a list of the birds observed by him in this interesting freshwater area. A party of the Zoological Survey of India consisting of Dr. B. N. Chopra, the senior author of this paper, Mr. R. A. Hodgart, Zoological collector, and an Entomological assistant spent about three weeks in November, 1927, surveying the lake and the surrounding area from the point of view of its freshwater fauna, and the following short paper deals with the species of fish collected or observed by the party.

In view of the recent paper by Mr. Ali cited above, it is not necessary to go into details about the topography of the area, but since the author in his account mentions only three species of fish from the lake, and as the fisheries of the area are of great importance—thousands of maunds of fish are caught and exported to all parts of the Punjab, Sind and Baluchistan every cold weather—we have thought it desirable to publish this paper on the different species observed or collected by the party.

Hume<sup>2</sup> is the only author, who has, so far as we can find, referred to the importance of the fisheries of the lake. He 'estimated the weight of the fish taken in a single "drive" at a ton. The biggest were "huge siluroids" six or seven feet in length.' This statement is not strictly correct, as the catches now a days are not so large, and in addition to the cat-fishes a very large quantity of Cyprinoids of the species mentioned below, are caught in the lake every year. The Cyprinoids, from the point of their value, are certainly of far greater importance to the fishermen and the *Dunra—Labeo rohita* (Ham. Buch.) is one of the most highly prized fish. None of the Siluroids in the lake during the survey of the area were found to exceed a length of 4 feet.

*List of fishes obtained from the Manchar Lake.*

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| 1. <i>Saccobranchius fossilis</i> (Bloch.).  | 15. <i>Barbus sarana</i> (Ham. Buch.).      |
| 2. <i>Wallago attu</i> (Bl. Schn.).          | 16. <i>Barbus conchoni</i> (Ham. Buch.).    |
| 3. <i>Entropichthys vacha</i> (Ham. Buch.).  | 17. <i>Barbus phutunio</i> (Ham. Buch.).    |
| 4. <i>Callichrous bimaculatus</i> (Bloch.).  | 18. <i>Barbus sophore</i> (Ham. Buch.).     |
| 5. <i>Pseudentropius garua</i> (Ham. Buch.). | 19. <i>Rohtee alfrediana</i> (Cuv. & Val.). |
| 6. <i>Aoria aor</i> (Ham. Buch.).            | 20. <i>Chela gora</i> (Ham. Buch.).         |
| 7. <i>Aoria cavasius</i> (Ham. Buch.).       | 21. <i>Chela punjabensis</i> Day.           |
| 8. <i>Aoria vittatus</i> (Bloch.).           | 22. <i>Chela bacaila</i> (Ham. Buch.).      |
| 9. <i>Labeo calbasu</i> (Ham. Buch.).        | 23. <i>Gudusia chapra</i> (Ham. Buch.).     |
| 10. <i>Labeo gonius</i> (Ham. Buch.).        | 24. <i>Hilsa ilisha</i> (Ham. Buch.).       |
| 11. <i>Labeo rohita</i> (Ham. Buch.).        | 25. <i>Notopterus notopterus</i> (Pallas).  |
| 12. <i>Cirrhhina mrigala</i> (Ham. Buch.).   | 26. <i>Notopterus chitala</i> (Ham. Buch.). |
| 13. <i>Cirrhhina reba</i> (Ham. Buch.).      | 27. <i>Xenentodon cancila</i> (Ham. Buch.). |
| 14. <i>Catla catla</i> (Ham. Buch.).         | 28. <i>Ambassis ranga</i> (Ham. Buch.).     |

<sup>1</sup> Ali, Salim A., *Journ. Bombay Nat. Hist. Soc.*, xxxii, pp. 460-471 (1928).

<sup>2</sup> *Vide* Gazetteer of the Province of Sind, B Volume iv, Larkana District, by J. W. Smyth, p. 6. (1919).

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| 29. <i>Ambassis baculis</i> (Ham. Buch.).       | 32. <i>Mastacembelus armatus</i> (Lacép.).   |
| 30. <i>Glossogobius giuris</i> (Ham. Buch.).    | 33. <i>Ophicephalus striatus</i> Bloch.      |
| 31. <i>Mastacembelus pancalis</i> (Ham. Buch.). | 34. <i>Ophicephalus punctatus</i> Bloch.     |
|   | 35. <i>Trichogaster lalius</i> (Ham. Buch.). |

As will be seen from this list, none of the species is new and all of them have a more or less wide distribution all over India. The following ten families are represented in the area:—Siluridæ (8 species), Cyprinidæ (14 species), Clupeidæ (2 species), Notopteridæ (2 species), Belonidæ (1 species), Percidæ (2 species), Gobiidæ (1 species), Mastacembelidæ (2 species), Ophicephalidæ (2 species) and Anabantidæ (1 species). The families Siluridæ and Cyprinidæ are best represented in the lake and some of the members of these two families grow to a fairly large size. The species which deserve a special mention in this connection are *Wallago attu* (Bloch. Schn.), *Aoria aor* (Ham. Buch.), *Aoria cavusius* (Ham. Buch.), *Labeo gonius* (Ham. Buch.), *Labeo rohita* (Ham. Buch.), *Cirrhina mrigala* (Ham. Buch.) and *Notopterus chitala* (Ham. Buch.).

#### Family SILURIDÆ.

##### *Saccobranchus fossilis* (Bloch.)

1794. *Silurus fossilis*, Bloch, *Nat. Ausl. Fische*, VIII, p. 46, pl. cclxx, fig. 2.

1889. *Saccobranchus fossilis*, Day, *Faun. Brit. Ind., Fish.* I, p. 126, fig. 53.

This species is represented in the collection by three young specimens, the largest of which is 100 mm. long.

##### *Wallago attu* (Bl. Schn.).

1801. *Silurus attu*, Bloch & Schneider, *Syst. Ichth.*, p. 378.

1889. *Wallago attu*, Day, *Faun. Brit. Ind., Fish.*, I, p. 126, fig. 54.

A single specimen of this species, 270 mm. long, was collected from the Manchar Lake.

##### *Eutropiichthys vacha* (Ham. Buch.).

1822. *Pimelodus vacha*, Hamilton Buchanan, *Fish. Ganges*, pp. 196, 379, pl. xix, fig. 64.

1889. *Eutropiichthys vacha*, Day, *Faun. Brit. Ind., Fish.*, I, p. 128, fig. 55.

This species is represented in the collection by two specimens of about 140 mm. length.

As we have recently pointed out<sup>1</sup> there appear to be two distinct varieties of *E. vacha*, one in which the snout is sharp and pointed, and the other in which it is blunt and rounded. The specimens from the Manchar Lake have a pointed snout.

##### *Callichrous bimaculatus* (Bloch.).

1794. *Silurus bimaculatus*, Bloch, *Nat. Ausl. Fische*, VIII, p. 24.

1889. *Callichrous bimaculatus*, Day, *Faun. Brit. Ind., Fish.* I, p. 131, fig. 57.

*C. bimaculatus* is fairly common in the fresh waters of Sind and occurs in the Manchar Lake in large numbers. Seven specimens were collected, the largest of which is 160 mm. long.

##### *Pseudotropius garua* (Ham. Buch.).

1822. *Silurus garua*, Hamilton Buchanan, *Fish. Ganges*, pp. 156, 375, pl. xxi, fig. 50.

1889. *Pseudotropius garua*, Day, *Faun. Brit. Ind. Fish.* I, p. 141.

The species is represented in the collection by four specimens, the largest of which is 185 mm. long.

##### *Aoria aor* (Ham. Buch.).

1822. *Pimelodus aor*, Hamilton Buchanan, *Fish. Ganges*, pp. 205, 379, pl. xx, fig. 68.

<sup>1</sup> Prashad & Mukerji, *Rec. Ind. Mus.*, xxxi, p. 176 (1929).

1889. *Macrones aor*, Day, *Faun. Brit. Ind., Fish.*, I, p. 149.

Two specimens of this species were collected from the lake; the larger of the two is well over a foot in length.

***Aoria cavasius* (Ham. Buch.).**

1822. *Pimelodus cavasius*, Hamilton Buchanan, *Fish. Ganges*, pp. 203, 379, pl. xi, fig. 67.

1889. *Macrones cavasius*, Day, *Faun. Brit. Ind., Fish.*, I, p. 155.

The maxillary barbels extend up to or even beyond the middle of the caudal fin. In addition to the usual black spot covering the basal bone of the dorsal fin, there is also a blackish spot behind the operculum. The maxillary barbels are dusky above.

This species is quite common in the Manchar Lake and a good series of it was collected. The largest specimen in the collection is 155 mm. long.

***Aoria vittatus* (Bloch.).**

1794. *Silurus vittatus*, Bloch, *Nat. Ausl. Fische*, v, p. 50.

1889. *Macrones vittatus*, Day, *Faun. Brit. Ind., Fish.*, I, p. 157.

The maxillary barbels extend as far as the middle of the anal fin and in some specimens even to the base of the caudal; they are blackish in colour. The adipose dorsal fin, in a specimen 90 mm. long, commences immediately behind the rayed dorsal and is three times as long as the base of the latter, while in younger specimens it is not more than twice the length of the base.

Eight specimens of different sizes were collected from the lake.

**Family CYPRINIDÆ.**

***Labeo calbasu* (Ham. Buch.).**

1822. *Cyprinus calbasu*, Hamilton Buchanan, *Fish. Ganges*, pp. 297, 307, pl. ii, fig. 33.

1889. *Labeo calbasu*, Day, *Faun. Brit. Ind., Fish.*, I, p. 259, fig. 93.

This species is represented in the collection by five young specimens, the largest of which is 150 mm. long.

***Labeo gonius* (Ham. Buch.).**

1822. *Cyprinus gonius*, Hamilton Buchanan, *Fish. Ganges*, pp. 292, 387, pl. iv, fig. 82.

1889. *Labeo gonius*, Day, *Faun. Brit. Ind., Fish.*, I, p. 261.

Five specimens of this species were collected from the lake. The largest of the series is 250 mm. long.

***Labeo rohita* (Ham. Buch.).**

1822. *Cyprinus rohita*, Hamilton Buchanan, *Fish. Ganges*, pp. 301, 388, pl. xxxvi, fig. 85.

1889. *Labeo rohita*, Day, *Faun. Brit. Ind., Fish.*, I, p. 262.

Five specimens of this species were collected from the lake. The largest of the series is 235 mm. long.

***Cirrhina mrigala* (Ham. Buch.).**

1822. *Cyprinus mrigala*, Hamilton Buchanan, *Fish. Ganges*, pp. 279, 386, pl. vi, fig. 79.

1889. *Cirrhina mrigala*, Day, *Faun. Brit. Ind., Fish.*, I, p. 278.

Three specimens of this species were collected from the lake. The largest individual is 280 mm. long.

***Cirrhina reba* (Ham. Buch.).**

1822. *Cyprinus reba*, Hamilton Buchanan, *Fish. Ganges*, pp. 280, 386.

1889. *Cirrhina reba*, Day, *Faun. Brit. Ind., Fish.*, I, p. 279, fig. 96.

A pair of short rostral barbels are present. Five specimens which vary from 115 to 124 mm in length, were collected from the lake.

***Catla catla* (Ham. Buch.).**

1822. *Cyprinus catla*, Hamilton Buchanan, *Fish. Ganges*, pp. 287, 387, pl. xiii, fig. 81.

1889. *Catla b Buchanan*, Day, *Faun. Brit. Ind., Fish.*, I, p. 287, fig. 99.

Two specimens of the species were brought back by the Survey party. None of the specimens is more than 230 mm. long.

**Barbus sarana** (Ham. Buch.).

1822. *Cyprinus sarana*, Hamilton Buchanan, *Fish. Ganges*, pp. 307, 388.

1889. *Barbus sarana*, Day, *Faun. Brit. Ind., Fish.*, I, p. 300.

In young individuals there is a faint blackish blotch near the base of the caudal fin, and another blackish mark is present behind the operculum, both in the young and adult individuals. The number of scales between the lateral line and the base of the ventral fins is  $4\frac{1}{2}$ .

This species is very common in the Manchar Lake and a large series of specimens of different sizes was collected. The largest specimen from the lake in the collection is 235 mm. long.

**Barbus conchonius** (Ham. Buch.).

1822. *Cyprinus conchonius*, Hamilton Buchanan, *Fish. Ganges*, pp. 317, 389.

1889. *Barbus conchonius*, Day, *Faun. Brit. Ind., Fish.*, I, p. 325.

Two specimens, about 35 mm. long, were collected from the lake.

**Barbus phutunio** (Ham. Buch.).

1822. *Cyprinus phutunio*, Hamilton Buchanan, *Fish. Ganges*, pp. 319, 390.

1889. *Barbus phutunio*, Day, *Faun. Brit. Ind., Fish.*, I, p. 327.

Two specimens, the length of which is about 35 mm., were taken at the lake.

**Barbus sophone** (Ham. Buch.).

1822. *Cyprinus stigma*, Hamilton Buchanan, *Fish. Ganges*, pp. 310, 389, pl. xix, fig. 86.

1889. *Barbus sophone*, Day, *Faun. Brit. Ind., Fish.*, I, p. 329.

A large series of specimens of this fish was collected. In all the specimens examined the barbels are entirely absent. The largest individual of the series is 75 mm. long.

**Rohtee alfrediana** (Cuv. & Val.).

1844. *Leuciscus Duvaucelii*, Cuvier & Valenciennes, *Hist. Nat. Poisson*, XVII, p. 77, pl. 491.

1889. *Rohtee cotio* var. *alfrediana*, Day, *Faun. Brit. Ind., Fish.*, I, p. 341, fig. 109.

A large number of specimens, varying in length from 65-75 mm., was collected from the lake. All the specimens have a faint blackish blotch behind the operculum.

**Chela gora** (Ham. Buch.).

1822. *Cyprinus gora*, Hamilton Buchanan, *Fish. Ganges*, pp. 263, 384.

1889. *Chela gora*, Day, *Faun. Brit. Ind., Fish.*, I, p. 362.

A single specimen, 145 mm. long, was collected from the lake. In this specimen the lateral line is interrupted above and slightly posterior to the middle of the pectoral fins. We have examined Day's specimens from Sind and several others from different localities in the collection of the Indian Museum, and find that in the majority of cases the lateral line is similarly interrupted. It is of interest to note that in specimens about 130-170 mm. long, the suborbital bones are narrower than or equal to the orbital width; it is only in considerably larger specimens that they are slightly "broader than the diameter of the eye" (Day).

The colouration of the specimen preserved in spirit is uniformly silvery except for the dorsum, which is blackish.

**Chela punjabensis** Day.

1872. *Chela punjabensis*, Day, *Journ. Asiat. Soc. Bengal*, XLI (2), p. 25.

1889. *Chela punjabensis*, Day, *Faun. Brit. Ind., Fish.*, I, p. 365.

A large series of specimens was collected from the lake. The colouration of the specimens in spirit is silvery with a distinct bright silvery lateral band. The dorsum including the snout is mottled with fine dark spots. The specimens are not more than 40 mm. long.

**Chela bacaila** (Ham. Buch.).

1822. *Cyprinus bacaila*, Hamilton Buchanan, *Fish. Ganges*, pp. 265, 384, pl. viii, fig. 76.

1889. *Chela bacaila*, Day, *Faun. Brit. Ind., Fish.*, I, p. 367.

The species is represented in the collection by six specimens, the largest of which is 110 mm. long. The number of rays in the anal fin in Sind specimens, according to Day, is "A. 2/11-12", but in all the specimens from the Manchar Lake there are three simple and twelve branched rays in the anal fin.

The symphysis of the lower jaw is tipped with black.

## Family CLUPEIDÆ.

**Gudusia<sup>1</sup> chapra** (Ham. Buch.).

1822. *Clupanodon chapra*, Hamilton Buchanan, *Fish. Ganges*, pp. 248, 383.

1889. *Clupea chapra*, Day, *Faun. Brit. Ind., Fish.*, I, p. 375.

A large series was collected from the lake. In some specimens a single blackish humeral spot is present, in others it is followed by a series, while in many such spots are entirely absent. The largest individual in the collection is 150 mm. long.

**Hilsa<sup>2</sup> ilisha** (Ham. Buch.).

1822. *Clupanodon ilisha*, Hamilton Buchanan, *Fish. Ganges*, pp. 243, 382, pl. xix, fig. 73.

1889. *Clupea ilisha*, Day, *Faun. Brit. Ind., Fish.*, I, p. 376, fig. 115.

This fish which ascends the Indus during the rains also occurs in the lake at certain times of the year. It is known as *Pulla* all over Sind. The species was not common in the lake at the time of the Survey, but a specimen was seen with the fishermen at Shah Hasan.

## Family NOTOPTERIDÆ.

**Notopterus notopterus** (Pall.).

1769. *Gymnotus notopterus*, Pallas, *Spicil. Zool.*, VII, p. 40.

1889. *Notopterus kapirat*, Day, *Faun. Brit. Ind., Fish.*, I, p. 406, fig. 129.

Eight young and four grown-up specimens were taken from the lake. The largest individual is 280 mm. long.

**Notopterus chitala** (Ham. Buch.).

1822. *Mystus chitala*, Hamilton Buchanan, *Fish. Ganges*, pp. 236, 382.

1889. *Notopterus chitala*, Day, *Faun. Brit. Ind., Fish.*, I, p. 407.

The species is represented in the collection by a single specimen, 285 mm. long. This specimen has a number of pea-shaped dark spots on the caudal portion arranged in a single longitudinal row; a few spots are also present on the rest of the body.

## Family BELONIDÆ.

**Xenentodon<sup>3</sup> cancila** (Ham. Buch.).

1822. *Esox cancila*, Hamilton Buchanan, *Fish. Ganges*, pp. 214, 380, pl. xxvii, fig. 70.

1889. *Belone cancila*, Day, *Faun. Brit. Ind., Fish.*, I, p. 420, fig. 136.

Three specimens of the species were collected from the lake; the largest of these is 200 mm. long.

## Family PERCIDÆ.

**Ambassis ranga** (Ham. Buch.).

1822. *Chanda ranga*, Hamilton Buchanan, *Fish. Ganges*, pp. 113, 371, pl. xvi, fig. 38.

1889. *Ambassis ranga*, Day, *Faun. Brit. Ind., Fish.*, I, p. 485.

<sup>1</sup> Regan, C.T., *Ann. Mag. Nat. Hist.*, xix (8), p. 307 (1917).

<sup>2</sup> Regan, C.T., *Ann. Mag. Nat. Hist.*, xix (8), p. 306 (1917).

<sup>3</sup> Weber, M. & L. F. de Beaufort, *Fishes, Indo-Austral. Archipel.*, iv, p. 134 (1922).

A large series of young and middle-sized specimens was obtained from the lake.

**Ambassis baculis** (Ham. Buch.).

1822. *Chanda baculis*, Hamilton Buchanan, *Fish., Ganges*, pp. 112, 371.

1889. *Ambassis baculis*, Day, *Faun. Brit. Ind., Fish.*, I, p. 485.

Only young individuals of this species were collected from the lake.

Family GOBIIDÆ.

**Glossogobius<sup>1</sup> giuris** (Ham. Buch.).

1822. *Gobius giuris*, Hamilton Buchanan, *Fish. Ganges*, pp. 51, 360, pl. xxxiii, fig. 15.

1889. *Gobius giuris*, Day, *Faun. Brit. Ind., Fish.*, II, p. 266.

The species is represented in the collection by many young and middle-sized specimens, the largest of which is 110 mm. long.

Family MASTACEMBELIDÆ.

**Mastacembelus pancalus** (Ham. Buch.).

1822. *Macrornathus pancalus*, Hamilton Buchanan, *Fish. Ganges*, pp. 30, 361, pl. xxii, fig. 7.

1889. *Mastacembelus pancalus*, Day, *Faun. Brit. Ind., Fish.*, II, p. 333.

Seven young individuals of the species were collected from the lake. They vary from 50–60 mm. in length.

**Mastacembelus armatus** (Lacép.).

1822. *Macrornathus armatus*, Lacépède, *Hist. Nat. Poisson*, II, p. 286.

1889. *Mastacembelus armatus*, Day, *Faun. Brit. Ind., Fish.*, II, p. 334.

There are six adult and one young specimen in the collection. The largest adult is 560 mm. long. The colouration, which is very bright in young individuals, becomes duller with age.

Family OPHICEPHALIDÆ.

**Ophicephalus striatus** Bloch.

1793. *Ophicephalus striatus*, Bloch, *Nat. Aust. Fische*, VII, p. 141,

1889. *Ophiocephalus striatus*, Day, *Faun. Brit. Ind., Fish.*, II, p. 363.

Two specimens of the species, about 165 mm. long, were collected from the lake. *O. striatus* appears to be less common than *O. punctatus* in the Manchar Lake.

**Ophicephalus punctatus** Bloch.

1793. *Ophicephalus punctatus*, Bloch, *Nat. Aust. Fische*, VII, p. 139.

1889. *Ophiocephalus punctatus*, Day, *Faun. Brit. Ind., Fish.*, II, p. 364.

A large series of specimens of different sizes was collected from the lake; the largest individual is 155 mm. long.

Family ANABANTIDÆ.

**Trichogaster lalius** (Ham. Buch.).

1822. *Trichopodus lalius*, Hamilton Buchanan, *Fish. Ganges*, pp. 120, 372.

1889. *Trichogaster lalius*, Day, *Faun. Brit. Ind., Fish.*, II, p. 373.

This species is very common in the Manchar Lake and a large series of specimens of different sizes was collected. The dorsal and the anal fins are pointed posteriorly in most specimens, but in some they are more or less rounded. In *T. lalius* the lateral line is very variable. Besides the specimens from the lake, we have examined large series of specimens from different localities preserved in the collection of the Zoological Survey of India, and find that the lateral line in this species may either pierce 4–6 anterior scales, or be vestigial; in some specimens, however, it is entirely absent. In *T. fasciatus* the lateral line is complete or interrupted about the middle of the body.

<sup>1</sup> McCulloch, R., and Ogilby, D., *Rec. Austral. Mus.*, XII, p. 235 (1919).